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EXAMINER				
TAYONG, HELENE E				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

10/533,711

**Applicant(s)**

BIRRU, DAGNACHEW

**Examiner**

HELENE TAYONG

**Art Unit**

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 5/3/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-893)
- Paper No(s)/Mail Date 3/5/05

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi et al (US 7092455, see IDS) in view of Bretl et al (US 20020001349).

(1) with regards to claims 1 and 11;

Choi et al discloses (in figs.1, 2 and 11) a system (see abstract) for multiplexed transmission (62) of normal (MPEG data) and robust digital video data (61), comprising:  
a multiplexer switching (62) between normal (MPEG data) and robust data (61) inputs (col.8, lines 43-49);

one or more units randomizing (63A), interleaving (63C) and encoding data (63B) from the multiplexer (62) into encoded data packets (col.8, lines 49-53); and

a processing unit (65) deinterleaving encoded data packets (66) produced by the one or more units (63), removing a trailing portion (66C) from each encoded data packet, and derandomizing (fig. 2, 19) a remaining portion of each encoded data packet 9 col.1, lines 39-55 and col.8, lines 43-67).

Choi et al discloses all of the subject matter discussed above, but for explicitly teaching packet formatter and interleaver.

However, Bretl et al in same field of endeavor discloses (in fig.11) a system

(page 5, [0062]) for multiplexed transmission (190) of normal (real ATSC, page 5, [0064], lines 15-17) and robust (robust VSB data, page 5, [0064], lines 6-12)) digital video data, comprising: a multiplexer switching (190) between normal and robust data inputs (page 5, [0064]); formatting (data replacer, 194), interleaving (192) (page 5, [0065]), and encoding data from the multiplexer (190) into encoded data packets (204, 208 and page 6, [0070]);

It would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated the device of Bretl et al in the system of Choi et al in order to process received data for the benefit of added robustness (page 1, [0006]).

(2) with regards to claims 2 and 12;

Choi et al further discloses wherein the multiplexer (fig. 11, 62), the one or more units (63), and the processing unit (65) form a portion of an enhanced vestigial sideband (VSB) encoder (see abstract), the one or more units (53) further comprising a data randomizer (63A), a Reed Solomon encoder (63B), an interleaver (63C) and a trellis encoder each operating in sequence on data from the multiplexer to generate the encoded data packets (fig. 11).

Choi et al discloses all of the subject matter discussed above, but for explicitly teaching packet formatter and interleaver.

However, Bretl et al in same field of endeavor discloses (in fig. 11) a system (page 5, [0062]) for multiplexed transmission (190) of normal (real ATSC, page 5, [0064], lines 15-17) and robust (robust VSB data, page 5, [0064], lines 6-12)) digital video data, comprising: a multiplexer switching (190) between normal and robust data

inputs (page 5, [0064]);formatting (data replacer,194),interleaving (192) (page 5, [0065]), and encoding data from the multiplexer (190) into encoded data packets ( 204, 208 and page 6, [0070]);

It would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated the device of Bretl et al in the system of Choi et al in order to process received data for the benefit of added robustness (page 1, [0006]).

(3) with regards to claims 3 and 13;

Choi et al discloses all of the subject matter discussed above, but for explicitly teaching a parity byte generator operating in conjunction with the trellis encoder to generate parity bytes for normal data switched by the multiplexer

However, Bretl et al in same field of endeavor teaches a parity byte generator (fig. 4, 82) operating in conjunction with the trellis encoder (46) to generate parity bytes for normal data switched by the multiplexer (page 3, [0045]-[0050]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated the device of Bretl et al in the system of Choi et al in order to process received data for the benefit of added robustness (page 1, [0006]).

(4) with regards to claims 4 and 14;

Choi et al further discloses wherein the processing unit (fig. 11, (65) and (66)) removes the trailing portion equal to a number of bytes required to form Motion Picture Expert Group (MPEG) compliant packets. Choi et al further that a supplemental data symbol processor that includes an MPEG header remover for removing three MPEG header bytes from the supplemental data inserted to the supplemental data segment

received from the demultiplexer; a null sequence remover for removing the null sequence inserted to the supplemental data packet; and a RS decoder for subjecting a null sequence remover output to RS decoding. There may be provided, a deinterleaver between the null sequence remover and the RS decoder for deinterleaving the null sequence remover output (Col.9, lines 24-43).

(5) with regards to claims 5 and 15;

Choi et al further discloses (in fig.11) wherein the removed trailing portion (66) comprises parity bytes for data packets containing robust containing normal data (MPEG data) and encoded data (input to multiplexer 62 data packets data (61) (col. 8, lines 43-49).

(6) with regards to claims 6 and 16;

Choi et al further discloses wherein the processing unit (fig. 11, 65) further comprises: a bit-to-byte converter (66A) and trellis (fig. 2, 16, deinterleaver (fig. 2, 17 and fig. 11, 66B) and operating sequentially on data packets received from the one or more units (fig. 11, 63); and a derandomizer (fig. 2, 19) operating on data packets after removal of the trailing portion (fig. 2, 18, fig. 11,66C).

(7) with regards to claims 7 and 17;

Choi et al further discloses wherein the processing unit (fig. 11, (65)) forwards packets generated by the enhanced vestigial sideband encoder to a standard vestigial sideband modulator (fig. 11, 66 and 67 and col. 8, lines 56-67 and col.9, lines 1-5).

(8) with regards to claims 8 and 18;

Choi et al further disclose wherein the standard vestigial sideband modulator

(transmitter) (fig. 1) further comprises: a data randomizer (1), a Reed Solomon encoder (2), an interleaver (3) and a trellis encoder (4) operating sequentially on data packets received from the enhanced vestigial sideband encoder (fig. 1);

a multiplexer switching (5) data packets generated by the standard vestigial sideband modulator with synchronization signals ( fig.1, segment sync signal and field sync signal); and

an antenna (9) transmitting signals corresponding to the switched data packets and synchronization signals (segment sync signal and filed signal) (col.1, lines 39-55).

(9) with regards to claim 9;

Choi et al further discloses a data link coupling ( fig. 11, connection from 65 to 66) the enhanced vestigial sideband encoder and the standard vestigial sideband modulator (transmitter) ( 63), wherein the antenna transmits ( fig. 1, 9) the signals over a wireless communications channel to a receiver (fig. 2, 9).

(10) with regards to claims 10 and 20;

Choi et al further discloses wherein the enhanced vestigial sideband encoder is implemented within a studio (receiver) and the standard vestigial sideband modulator is implemented with a transmitter (figs. 1, 2 and 11).

(11) with regards to claim 19;

Choi et al discloses in figs. 1, 2 and 11) a system (see abstract) for multiplexed (62) transmission of normal (MPEG data) and robust digital video data (61), comprising:

an enhanced vestigial sideband (VSB) encoder having normal and robust data inputs (fig. 11, 63, 66) and including:

a multiplexer switching (62) between the normal (MPEG data) and robust data inputs (61);

a data randomizer ( 63A ) , a Reed Solomon encoder ( 63B ) , an interleaver (63C) and a trellis encoder ( fig. 1, 4) each operating in sequence on data from the multiplexer to randomize (1) and encode data (2) from the multiplexer and generate the encoded data packets (figs. 1 and 11); and

a processing unit (65) deinterleaving encoded (66) data packets produced by the data randomizer (63), Reed Solomon encoder(63B), and trellis encoder (fig. 1, 4), removing a trailing portion from each encoded data packet ( 66C), and derandomizing a remaining portion of each encoded data packet ( fig. 2, 19); and

a standard vestigial sideband modulator receiving data packets from the enhanced vestigial sideband encoder and including (fig. 11):

a data randomizer 963A), a Reed Solomon encoder (63B), an interleaver (63C) and a trellis encoder ( fig.1, 4) operating sequentially on data packets received from the enhanced vestigial sideband encoder 9 fig. 11, 66); a multiplexer switching data packets (fig. 1, 5) generated by the data randomizer (1), Reed Solomon encoder (2), interleaver (3) and trellis encoder (4) with synchronization signals ( segment sync signal and filed sync signal) ( col.1, lines 19-37); and

an antenna transmitting signals corresponding to the switched data packets and synchronization signals (fig. 1, 9).

Choi et al discloses all of the subject matter discussed above, but for explicitly teaching packet formatter and interleaver.



However, Bretl et al in same field of endeavor discloses (in fig.11) a system (page 5, [0062]) for multiplexed transmission (190) of normal (real ATSC, page 5, [0064], lines 15-17) and robust (robust VSB data, page 5, [0064], lines 6-12)) digital video data, comprising: a multiplexer switching (190) between normal and robust data inputs (page 5, [0064]);formatting (data replacer,194),interleaving (192) (page 5, [0065]), and encoding data from the multiplexer (190) into encoded data packets ( 204, 208 and page 6, [0070]);

It would have bee obvious to one of ordinary skilled in the art at the time of the invention to have incorporated the device of Bretl et al in the system of Choi et al in order to process received data for the benefit of added robustness (page 1, [0006]).

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lee (US 5619269) discloses Frame sync signal for digital transmission system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELENE TAYONG whose telephone number is (571)270-1675. The examiner can normally be reached on Monday-Friday 8:00 am to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Liu Shuwang can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Helene Tayong/  
Examiner, Art Unit 2611

May 6, 2008  
/Shuwang Liu/  
Supervisory Patent Examiner, Art Unit 2611